

AMENDMENTS TO THE CLAIMS

Claims 1-11 (CANCELLED)

12. (New) An optical receiver comprising:

an optical divider that divides an optical input signal into a plurality of paths;

a plurality of optical-to-electrical converters that respectively converts the divided optical input signals into electrical signals;

a plurality of discriminators that respectively outputs discrimination results by discriminating the electrical signals output from the optical-to-electrical converters based on predetermined thresholds; and

an operational circuit that performs a predetermined logical operation with the discrimination results output from the discriminators.

13. (New) The optical receiver according to claim 12, wherein

the predetermined thresholds are different from an optimum threshold that is used when discriminating the optical input signals divided into the paths with a single discriminator.

14. (New) The optical receiver according to claim 12, wherein

the optical divider is an optical polarization divider that divides the optical input signal based on a polarization state of the optical input signal.

15. (New) The optical receiver according to claim 14, further comprising:

an optical polarization controller provided at a pre-stage of the optical polarization divider;

a plurality of power monitoring units that respectively monitors optical signal powers on the paths; and

a control circuit that controls the optical polarization controller based on the optical signal powers, wherein

the control circuit controls the optical polarization controller such that output values of the optical signal powers monitored by the optical monitors become substantially equal.

16. (New) The optical receiver according to claim 12, wherein

the predetermined thresholds of the discriminators are substantially equal.

17. (New) The optical receiver according to claim 12, wherein

the discriminators are soft decision discriminators,

a plurality of operational circuits is provided, to which a plurality of discrimination results from the soft decision discriminators is respectively input, and

the optical receiver further comprises:

a bit-error-rate monitoring unit that monitors a bit error rate of an output result of each of the operational circuits; and

a path selecting unit that selects an output result having a low bit error rate based on monitoring information of the bit-error-rate monitoring unit.

18. (New) The optical receiver according to claim 12, wherein
the operational circuit is a logical OR circuit.
19. (New) The optical receiver according to claim 12, wherein
the operational circuit is a logical AND circuit.
20. (New) The optical receiver according to claim 12, further comprising:
a bit-error-rate monitoring unit that monitors a bit error rate of an output result of the
operational circuit; and
a discrimination-threshold control circuit that changes levels of the predetermined
thresholds of the discriminators based on monitoring information of the bit-error-rate monitoring
unit, wherein
the operational circuit switches a function of the logical operation based on the levels of
the predetermined thresholds of the discriminators.
21. (New) The optical receiver according to claim 20, wherein
the function of the logical operation includes a logical OR operation and a logical AND
operation.
22. (New) An optical communication system comprising:
an optical transmitter that transmits an optical signal; and
an optical receiver that receives the optical signal transmitted from the optical transmitter,

wherein

the optical receiver includes

an optical divider that divides the received optical signal into a plurality of paths;

a plurality of optical-to-electrical converters that respectively converts the divided optical input signals into electrical signals;

a plurality of discriminators that respectively outputs discrimination results by discriminating the electrical signals output from the optical-to-electrical converters based on predetermined thresholds; and

an operational circuit that performs a predetermined logical operation with the discrimination results output from the discriminators.